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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,531	06/15/2001	Jacobus Philippus Van Dyk	12683-003001	8452

7590 06/02/2003  
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EXAMINER

BOS, STEVEN J

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 06/02/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/744,531

Applicant(s)

Van Dyk et al

Examiner

Steven Bos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Apr 24, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-13, 15-17, and 19-21 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13, 15-17, and 19-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 24, 2003 has been entered.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,6,21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 1,6, "stabilizing an anatase phase in the slag, causing ... to the Ti(IV) state" is new matter. The instantly claimed "stabilizing ..." step implies that the "stabilizing" is what causes the subsequently recited "causing" steps. This is as also explained in applicant's response on pg. 5, second full paragraph. This is not supported by the instant specification because it is the "oxidizing" step which allows or causes the subsequent anatase phase to stabilize in the slag as well as the "causing" recitations which follow it. Furthermore, the instantly claimed "stabilizing" step per se is new matter as the instant specification nowhere discloses such a "stabilizing" step.

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The instant specification discloses that it is the oxidation step which causes an anatase phase to stabilize in the slag.

The limitations of claim 21 are new matter.

Claims 1,6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instantly claimed "stabilizing an anatase phase in the slag, causing ... Ti(IV) state" is not enabled by the instant specification which does not disclose what the "stabilizing" step is nor that such "stabilizing" is what "causes" the subsequent instantly claimed "causes" steps.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,6-13,15-17,19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borowiec '420 or WO 97/19199.

Borowiec and WO '199 each suggest the instantly claimed process and product thereof but may differ as to the oxidizing temperature (see claims 1-36, cols. 8,16,17 of Borowiec and pp.

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11,29,30 and the claims of WO '199). The taught "900°C" would overlap the instantly claimed "below about 900°C" due to the scope of the word "about" (see *In re Ayers* 69 USPQ 109 or *In re Devaney* 88 USPQ 97 or *In re Erickson* 145 USPQ 207). Also, these values, even if not seen to be overlapping are not patentably distinguishable (see *In re O'Farrell* 7 USPQ2d 1673 or *Titanium Metals Corp. of Amer. v. Banner* 227 USPQ 773. The taught positive process steps are suggested by the prior art therefore the instantly claimed "causing" steps would also be suggested. Even though examples 12,13 of Borowiec and WO '199 are a comparison to the prior art these examples do teach the instantly claimed positive process steps at temperatures which either overlap, eg. 900°C, or are within the temperature range, eg. 850°C, instantly claimed.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, *In re Malagari*, 182 USPQ 549.

Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show the same process of making, *In re Brown*, 173 USPQ 685, *In re Fessmann*, 180 USPQ 324, *In re Spada*, 15 USPQ2d 1655, *In re Fitzgerald*, 205 USPQ 594, and MPEP 2113.

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The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results, see *In re Boesch*, 205 USPQ 215.

Applicant's arguments filed February 27, 2003 have been fully considered but they are not persuasive.

Applicant states that neither WO '199 or Borowiec teach or suggest the instantly claimed "stabilizing an anatase phase in the slag ...".

However each of the references teaches or at least suggests the instantly claimed positive process steps so that they would also provide the instantly claimed "stabilizing" step.

Applicant states that each of the references teach away from oxidation at below 900C since they teach that oxidation has to be above 950C.

However as explained above the scope of the word "about" would mean that there is an overlap of the taught temperatures with those instantly claimed. It is noted that a reference is not limited to its preferred embodiments but may be used for all it fairly teaches or suggests.

Applicant states that examples 12 and 13 of the references show that substantially no upgrading of the titania slag is achieved.

However examples 12 and 13 of the references each teach the same process conditions, i.e. sized titania slag, oxidizing temperature and time and reducing temperature and time, as are

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instantly claimed. Therefore it not clear why examples 12 and 13 would not also obtain an anatase phase stabilized in the slag.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a slag treated wherein an anatase phase is stabilized during oxidation of a slag at the temperature range as claimed) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant states that neither reference teaches or suggests that the TiO<sub>2</sub> content is increased to at least 90% by weight.

However examples 1-11 in each reference teach this limitation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Bos whose telephone number is (703) 308-2537. The examiner is on the increased flexitime program schedule and can normally be reached between 8AM and 6PM Monday through Friday. The FAX No. for After Final amendments is 703-872-9311; for all others it is 703-872-9310. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven Bos  
Primary Examiner  
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A handwritten signature in black ink, appearing to read 'SJB', with a stylized flourish at the end.